Principal Constituents Decomposition of Economic Development—A Domestic Level Analysis of Sub-Saharan African Countries

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Abstract

This paper tries to answer the question of what should be the main focuses to improve the poverty situation in Sub-Saharan Africa, through a liberal perspective, by decomposing the economic development in the region into several principal constituents on the domestic level. Emphasis is made on the policy evaluation and implications from these constituents, with a special note on the actual institutional implementation, where the issues of agency coordination are discussed. A case of Tanzania is provided in the appendices in an attempt to better illustrate the analytical results.

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1. Introduction

Following the declaration of the Millennium Development Goals[1], the poverty goal of which calls for reducing by half of the proportion of world population living on less than 0.5 USD per day, countries have erected ambitious poverty reduction plans to realize this grand vision. In the past decade, inspiring achievements have been made worldwide and the general trend of economic development seems to have become the theme of the 21st century. Countries, especially those in East Asia, have done a tremendous job in poverty reduction. China alone, has contributed a relief of 600 million people from poverty between 1981 and 2005. However, regional disparity of poverty reduction has been enlarged between developing countries. Notably, the poverty rates in some Sub-Saharan African (SSA) countries have been persistently above trend throughout the past two decades. Under the enormous influence of globalization, the poverty issue in Africa has become increasingly aware of and globally addressed. In the literature of theoretical and empirical studies of poverty issues in Africa, two fundamental analytic pivots stand out: causes of poverty and cures for poverty. Traditionally, related research and debates in the academia on this topic have been generally divided into three major IPE perspectives, namely, Mercantilism, Liberalism, and Structuralism, with respect to their principal analytic angles.

2. Analytic Premise

Common views concerning the formulation of poverty in Africa—why Africa is poor—usually stem from a Structuralist, or sociological, perspective, highlighting what the region has had no control over, e.g. colonialism, instead of focusing on what it may control. As early as Lenin's Imperialism, the Structuralist perspective has been applicable to explaining the depleted situation of the continent, especially the SSA countries, which have fell early on to the colonial expansion of European conquerors. Colonialism and the

[1] The Millennium Development Goals (MDGs) are eight international development goals that 192 United Nations member states and at least 23 international organizations have agreed to achieve by the year 2015. They include reducing extreme poverty, reducing child mortality rates, fighting disease epidemics such as AIDS, and developing a global partnership for development.

triangular trade starting from the 16th century have proved to be a commonly cited reason for the present fragility of the region's socio-economic stability.[2]

Admittedly, the Structuralist approach has been well accepted and evaluated as a sound explanation for the causes of poverty in Africa. However, it should be noted that a major deficiency of this approach to the African poverty issue lies in its limited implication that the region has always been subjugated to a historically-rooted structure of oppression. This implication is at most conclusive but not inducing. Every African country has its own set of problems and variables, with a recent history of development that has been far from smooth and varied considerably relative to the region as a whole. Note that, countries, namely Ethiopia and Liberia, that have never been colonized before are not at all out-performing other countries in recent years. As there are heterogeneous factors and concrete variables that collectively affect every single country, too general an approach of rigid theorization would seem to provide little, if at all, momentum to the normative analysis at a pragmatic level for improvement.

In this paper, I invoke no debate among theorists on the topic of poverty formulation in the region, but rather approach the issue of poverty in Africa, precisely in the SSA

[2] One theory, the "Weapon and skill factors" focuses on the actual material flows of colonialism. While India, colonized by the Great Britain, was de facto a beneficiary of the basis for an industrial structure, with roads and railways, most Sub-Saharan countries did not benefit from such projects, but instead were exploited for their manual labor and raw materials. Although both places were colonies, the inflicted treatments did, from this perspective, vary tremendously. Drawing on those observations one quickly comes to the conclusion that it has been a lot easier for India to catch up than it had been for countries south of the Sahara. Further details have been added to strengthen the view, even stretching to the point where the human cruelty of several of the region's conflicts (Sudan, Rwanda, etc.) was the consequence of the slave trade in a hitherto peaceful region void of such horrible acts. Although the basis that the Europeans did mostly not bring industrialization to the region is true, and is not an advantage in the early 21st century, further developments of the theory are void of concrete foundation.

A more recent theory, the Modern World System (MWS), portrays another explanation for the region's state. Again, it uses events that the region has no control over to explain its internal state. According to the MWS, the world economy, capitalist at heart, "provides the sole means of organization in the international system". The region south of the Sahara has been "out of the loop" of the world economy and thus stands at its periphery. Consequently, the region is hopelessly standing by as famine and other horrors slowly dash any hopes for it to one day play a role in the global economy that left it aside in the first place. It somewhat implies the region could not theoretically be a self-sufficient center, that there is only one absolute motor of growth called the "World Economy". This assumption itself is not infallible, but it reflects the fact that there may be little the "peripheral countries" can do to change the unfavorable global systems currently---they are still dependent.

region[3], where essentially the poverty problem arises, through the lens of a more liberal and forward-looking perspective. I motivate the analysis with an attempt to address the issue of development, i.e., how the poverty situation can be improved and what might be the possible motors for growth. It should be pointed out that the analytic locus of control of this paper is the emphasis on searching for a set of liberal constituents, over which governments, be them mercantilist or liberal in essence, have control, that can provide a basic framework of evaluation and implication in consideration of the common development problems in the region.[4] Liberal constituents as I define here are referred to the distinctive aspects of a nation's socio-economic development involving markets and individuals; liberal policies thus serve as a de-ideologized tool to engineer the nation's socio-economic environment whenever and wherever they are perceived appropriate. The paper posits no assertion of a required adoption of liberal values at the height of states on a massive scale,[5] but will try to prove the appropriateness of liberal policies as defined above in the current context of SSA countries. Given the intention of establishing a generic model for each country in the region to adapt and apply for policy evaluation and implication, I narrow the scope of the paper to an analysis of the principal constituents of economic development on a domestic level, addressing issues to which feasible implementations of effective measures exist, excluding the international and global factors that would otherwise complicate the poverty issue in the region.

3. Methodology

Motivated as in the last section, I want to find a set of common factors that can account for poverty reduction differences between countries, by which I can construct a

[3] We focus on SSA countries rather than the entire continent also for the sake of comparable analysis of the poverty issue, i.e., countries north of Sahara generally have higher standards of living and top the continent in terms of GDP per capita and other economic indicators, which would otherwise make the comparison biased in nature.

[4] Here a significant distinction should be made between liberal or mercantilist states and liberal or mercantilist policies.

[5] We do not challenge and it is irrelevant to our analysis to challenge the central debate in economic development of nations that whether markets or states triumph one another. After all, a mercantilist government can still adopt liberal policies if it is to their favor. It should be clear that it is the alleviation of poverty and mass suffering that we are focusing on, without any assumption of the intention of the states.

benchmark model for the examination of related policies and possible implications for future policy directions. A brief literature survey suggests many relevant methods and techniques in decomposing the poverty situation in SSA, among which stands the one most illuminating to the approach I adopt, i.e. Rodrick et al (Rodrick et al., 2002), in which a multiple-regression model of three independent variables, namely, institution, geography, and integration/economic openness, has been constructed and tested to pin down institution as the most important factor in indicating a country's economic performance, transcending the influence of geography and market integration. Institution, by definition, concerns with administration & legislation and the legal framework within which an organization operates (Mule, 2009). It consists of public and private sectors. Public institutions include the protection mechanism of property rights, enforcement of judicial independence and security, along with deterrence of corruption and government inefficiency. Private institutions are more active in economic sector, mainly referring to corporate ethics and accountability.[6] Utilizing a large scale data set collected from 140 countries worldwide, their regression result on a wide choice of factors including institution, market integration and colonial influence has shown a dominant impact of institution on living standard improvements over all other factors.[7]

Facing the retarded institutional developments in many SSA countries since 1980s, and given the above strong message about the role of institution, I wonder if institution status can be a strong indicator of SSA countries' poverty level by influencing their economic development process, as suggested by the world pattern in Rodrick et al (RTS, 2002). To test the hypothesis of institutional significance, a multiple-regression analysis is performed. I adopt the factor screening mechanism in the previous paper[8] to complete the factor choice with the top three constituents, among those national socio-economic indicators published and ranked by the World Economic Forum 2009, as potentially the

[6] Schwab K., 2009, "The Global Competitiveness Report 2009-2010", pp. 44-45

[7] According to their research, a unit positive shock to the institutional quality equation ultimately produces in log incomes of 2.15, 4.4 times the impact on log income by a positive shock to the trade equation.

[8] This mechanism in the paper is in itself built upon the work of Acemoglu, Johnson and Robinson (Acemoglu et al., 2001) and Frankel and Romer (Frankel and Romer, 1999).

most influential factors, so as to run the regression in the context of 11 comparable SSA countries. With some notations, the representative equation has the form:

$$y_i = \beta_0 + \beta_1 INS_i + \beta_2 RES_i + \beta_3 H \& PE_i + \varepsilon_i$$

y_i is the purchasing power parity (PPP) of country i, which measures the local purchasing power. The values for the three regressors on the right side of the equation are taken as their global rankings in 2009. INS_i is the global ranking of country i's institutional environment, taking legal, public and private institutions into consideration, provided by the World Economic Forum 2009. RES_i is the value created by natural resources in country i, measured by the sum of export value of precious stones, metals, mineral fuels and lubricants [9], whose data are collected from Trade Statistics for International Business Development 2008 by the International Trade Center, measured in thousand USD[10]. $H \& PE_i$ is the health and primary education ranking[11] given in the World Economic Forum Report. I select them as one of the regressors since HIV/AIDS is inflicting the entire African continent, significantly reducing the productivity of its labor force and primary education is considered vital to the general labor productivity level.

Before the presentation of the benchmark result, some comment on the possible reverse causality of this model should be made. Work by RST (2002) suggests that their model shows a statistically insignificant effect of reverse causality and the data selection criteria adopted by FR (1999) and AJR (2001) have excluded, as much as possible, the correlation between instrument of institution and other plausible determinants of income levels. However, as pointed out by Ashok Chakravarti (Chakravarti 2006, pp.24-26), though the reverse causality is negligible in statistical sense, income levels and other factors such as resources could have an indirect influence over the quality of institutions. I accept the critic of possible reverse causality, but would focus on the larger impact of institution on income level rather than the reverse direction since the former is statistically significant in our analysis.

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[9] It is the log-normalized value that we use in order to match the regression scale.

[10] International Trade Center (with its sources from UN and local governments), *Trade Statistics for International Business Development 2008*

[11] In the report, the ranking of the two factors is bundled and a composite index of measurement is used.

4. **Benchmark Result**

The regression result (see Appendix C for detail) shows the following characteristic equation of regressing PPP (purchasing power parity) on the three principal constituents I just identified:

$$\overline{y_i} = -10.3354 INS_i - 128.6785 RES_i - 6.3083 H \& PE_i + 456.9752$$

R^2= 0.536967 (5.0866) (48.2827) (18.3675) (2273.8753)

The negative coefficient between institution ranking and PPP shows a statistically significant impact of institutional environment on general living standard, indicated by PPP, at a 95% confidence level. And this result coincides with the observations made by RST (2002). Although highly undesirable institutional environment is prevalent in SSA countries, reflected by their generally low rankings in the Global Competitiveness Report 2009-2010, with a mean of 88.25 (out of 133 countries), countries with relatively higher institution status still show their advantage in economic performance over their peers.

5. **Interpretation of the Benchmark Result**

5.1 Institutions

Although the institution's β is relatively smaller than those of the other two principal constituents, it is the factor that a country has better control over, which I coin the term "tangible endogenous variable". As the regression result shows a statistically significant impact of institutional environment on the economic performance of SSA countries, improvements in institutional effectiveness will arguably lead to better economic outcomes, thus contributing to poverty reduction. The following analysis first examines the evidence of different economic outcomes achieved within different legal systems maintained by countries with similar socio-economic backgrounds and then examines the evidence of different institutional effectiveness under different administrative & legislative frameworks.

5.1.1 Legal system

Both famous for gold production and with heavy reliance on the agricultural sector, Ghana and Tanzania, gaining independence from the British rule at around the same time from late 1950s to early 1960s, show a notable difference in economic performance due to disparity in institutional environment. Ranked 68 in institution, Ghana has a $200 surplus of PPP per capita over Tanzania, ranked 74 in 2008.

Property right protection, a key factor in determining the desirability of a residential real estate investment, constitutes an important pillar in institution analysis. Scored 50/100 in Global Property Guide[12], Ghana has a much better defined legal framework serving the market mechanism than Tanzania, who scored only 30/100. A more comprehensive analysis was done by Timothy Besly from the London School of Economics (Besley, 1995), arguing that a well defined land right has a significant impact on investment incentives in Ghana. On the other hand, Tanzania is criticized for its lack of clear definition of property rights and strong execution of law, especially for indigenous people and women. For example, there are three different laws applied to inheritance, based on race and religion. For Christians and people of European religions, the Statutory Law applies, in which a widow may be entitled to 1/2 of the property of the deceased. For Muslims, the Islamic Law applies and a widow is only entitled to up to 1/4 of the property conditioned on issue of marriage. And sadly for the majority of the population, women are not entitled to inheritance at all, according to the Customary Law.[13] Such a complicated and sometimes vague inheritance system is but one example of the not well defined legal framework, especially that concerning property rights, in Tanzania, which severely hinders its economic activity, especially in the private sector.

As proven by practice, a clearly defined and non-discriminatory property right in the legal system is the base for market mechanism to be fully functional. A lighter and more transparent administrative procedure with regard to transfers of property right is not only a matter of good governance but a protection to the right per se. Also, with the rise of information technology, the protection of intellectual property right by establishing an

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[12] The Heritage Foundation and The Wall Street Journal, *Global Property Index*

[13] Legal and Human Rights Center, *Tanzania Human Rights Report 2008*

efficient enforcement mechanism has become more and more important in the 21st century.

5.1.2 Administration and Legislation

According to records by the Africa Research Institute, Tanzania and Senegal are two SSA countries that have enjoyed relatively long periods of political stability. Both made peaceful transitions from single-party 'African socialism' to multi-party democracy, becoming favorites with foreign donors and development agencies. Recent elections were declared free and fair by international observers, but courses of institutional reform in the two countries have diverged.[14] According to the Ibrahim Index of African Governance 2008[15], Table 1 compares places moved by the two countries in governing performance ranking from 2000 to 2008.

During the 1980s and 1990s in Tanzania, party loyalty was demanding. People with dissents would be regarded as unpatriotic. Even after the multi-party constitution was first enforced in 1992, little had changed. CCM, the majority party, still acted as if Tanzania was a one-party state.[16] However, real changes in the country have been recently taking place, including much greater independence of the Parliament. The Parliament no longer serves an appendage of the Prime Minister's Office. With financial independence for the first time, it starts to receive external donations directly. Also, the House Standing Orders have been revised in Tanzania to strengthen the oversight role of the House. The new Standing Orders introduced the Prime Minister's Question and Answer Session which takes place every Thursday during Parliamentary Session. Apart from testing the Prime Minister's ability to respond to impromptu questions, the Q&A session, like other parliamentary activities, is televised live, which allows the general public to gauge the seriousness of their government in tackling issues of public interest.[17] The 2008 Public Audit Act initiated by the Parliament's Public Accounts Committee also stands to explain how the audit reports are longer, produced on time and taken more

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[14] Africa Research Institute, *Briefing Note 0901*, Oct. 2009
[15] Rotberg R. and Gisselquist R., 2008, *Ibrahim Index of African Governance 2008,* Mo Ibrahim Foundation
[16] Tanzania Affairs Editing Group, *Tanzania Affairs, Reviews* (online resource)
[17] Tanzania Corruption Tracker System, *New Standing Orders as TZ Parliament Faces Corruption,* May 2009

seriously by the President.[18] Such measures have, supported by empirical evidence, reduced corruption and increased the autonomy of key oversight bodies so as to develop more transparent and effective institutions.

In sharp contrast to Tanzania, in Senegal, President Wade and his coalitions have amended the Constitutions for 11 times since the beginning of 2007. The amendments have arguably weakened the independence of the Parliament.[19] Of the current 100 seats in the Senate, 65 were directly appointed by the President, suggesting an overwhelming presidential power in this democratic country. On the administrative side, the administrative court of specialized magistrates charged with preparing the annual report on public accounts for the Parliament, has not received details of government expenditure for 2007 and 2008.[20] As suggested by the above evidence, the governing party has modified to its own advantage the public institutional policies. According to the Africa Research Institute, other institutions in Senegal have also been similarly adapted, abolished or reinstated, in priorities of the governing party.

Although political stability of SSA countries can help attract a significant amount of FDI, how to manage such financial resource effectively and fairly stands to be the biggest challenge for these countries' domestic institutions. The research I did suggests that institutional reforms designed to strengthen legislative and supervisory power and improve administrative transparency prove to be among the most critical steps to build a robust institution.

5.2 Resources

Observed from the characteristic equation, the beta for resources is relatively much larger than the other two, reflecting the vital role of natural resources in determining SSA countries' economic progress. It should be noted that although I focus on the endogenous variables of significance to a country's economic development in this paper, I

[18] National Audit Office of Tanzania, *Publications*
[19] Comparative Constitutions Project*, Constitutional Events*
[20] Magistrate of the Cour Des Comptes, 2004, "Public Expenditure Management: HIPC Country Assessment and Action Plan – Senegal", IMF/The World Bank

acknowledge to a large extent the role of exogenous variables specific to a country in the development process, which may account for a large portion of the difference in poverty reduction among SSA countries, ceteris paribus.

Nevertheless, it should be pointed out that endogenous factors, e.g. quality of institution, have the potential to make up for resource insufficiency, as in the case of Gambia. The log value of Gambia's crude resource export is \$11.84, mainly consisting of groundnuts, much lower than \$18.48 in Uganda, a country blessed with substantial natural resources including copper, cobalt, oil and natural gas. However, Gambia is one of the most liberal, market-oriented economies with a high ranking of institutional environment in the world (27/133) while Uganda is ranked only 106/133 in 2009. The PPP per capita of Gambia out-performed Uganda by \$200 in 2008. Contrary to the mal-functioning institutions inflicting Uganda, a complete legal system, among other well-designed institutions, has helped Gambia successfully manage its agriculture-based economy, cultivate a mature tourism industry and utilize its ports to develop re-export trade basing on its low import duties, minimum administrative costs and liberal exchange regime, a combination of which the other west African countries desperately lack.

5.3 Health and Education

5.3.1 Health

Regression result shows that health and education has a significant influence over poverty due to their direct impact on human capital. In this section, I first focus on the health issue. Health problems can result in poverty simply because people are in such case deprived of productivity to different extents. The relationship between poverty and health constitutes a vicious cycle: poor health can cause poverty and poverty can further lead to poor health since poor people cannot afford quality medical services, according to Grant, 2005. Health statistics in SSA imply that much is to be done to alleviate the problem: the under-five mortality rate, the number of woman dead from pregnancy and childbirth, and life expectancy, are all much worse than those of the rest of the world.[21] As one of the most cited causes of poverty, HIV/AIDS has resulted in high levels of mortality, with the number of people dying from AIDS in SSA still increasing (Handley et al., 2009). AIDS exacerbates the poverty problem by severely hampering labor productivity, which in turn leads to lower income and lower level of security (especially food security), thus increasing their vulnerability to other diseases (Harvey, 2004). HIV/ADIS can also restrict government budget and public service delivery, further undermining the social stability (Handley et al., 2009). To tackle this giant problem, two types of policies have been devised in the hope of effective implementation. The first is a broad public health response mechanism, which focuses on improving the access and quality of primary health care. The other is disease-targeting prevention schemes. However, budgetary constraints, inadequate governance and accountability issues have greatly undermined the effectiveness of such policies (Bird and Busse, 2006). In order to facilitate a better implementation, robust institutions with stronger supervisory guidance are necessary.

5.3.2 Education

Similar to health, education influences poverty reduction heavily through its direct effect on human capital accumulation and labor productivity. In this section, I aim to answer three main questions: (1) Is there a correlation between education and poverty? (2) To what extent can education help with poverty reduction in SSA? (3) What can be done to improve education in SSA and hence reduce poverty?

When compared to world enrolment rates for primary and secondary school education, Africa lags far behind. For example, in 2007, there were 71.8 million primary age children in the world who were out of school.[22] The shocking fact is that almost half of these children lived in SSA. In addition, the world average enrolment rate for secondary school education in 2007 was 58.8%, whereas in SSA, this figure was just slightly above

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[21] United Nations Development Program, *UNDP: An Effective and Accountable Development Partner*, pp. 265

[22] Edstats, *The State of Education Around the World*, The World Bank, last updated Jul. 2009

25%.[23] With such concerning statistics, I examine whether this lack of access to quality education in SSA contributed to poverty. To proceed, I look at the correlation between secondary school enrolment rates and GDP per capita (GDP pc).

Table 1 shows the 10 countries with the lowest secondary net enrolment rates, with Mozambique having the lowest rate of just 2.55%. All of the countries listed are in SSA, with five out of ten being in West Africa. Figure 1 goes one step further to examine the relationship between GDP pc and net enrolment rate. It shows that countries with a very low GDP pc have net enrolment rates ranging from 2% to 92%, which strongly implies a low GDP pc does not necessarily mean a low enrolment rate. This makes logical sense because a country with a low GDP pc is still able to invest heavily in education by allocating all its resources to improve access to education and hence achieve the outcome of a high net enrolment rate. However, the graph also shows us that low secondary net enrolment rates are found in countries with low GDP pc. All the countries with net enrolment rates less than 25% have a GDP pc of less than 1000 USD. In other words, there is a statistically significant positive correlation between education, measured by secondary net enrollment rate, and poverty, measured by GDP pc. There are simple reasons as to why this relationship exists. First, low secondary enrolment rates indicate a loss of benefits that arise from having an educated population for the country, the benefits of which are that educated people are more likely to find jobs, generally more productive and hence earn more. Second, education gives people relevant skills to become entrepreneurs and hence more likely to innovate, which helps stimulate economic growth and thereby generate more job opportunities.[24] According to a study by Hanushek and Zhang (2006), "education of good quality promotes economic growth and helps people to rise out of poverty".

Having answered the first two questions, I now turn to the question of how can SSA countries increase access to education as well as improve its quality. Note that, one straightforward reason for low enrolment rates in many SSA countries is the high financial costs of schooling, which makes education less affordable to the poor, whose

[23] ditto

[24] The World Bank Site-resources, *Education and Poverty*

demand are very price elastic. In Kenya, this problem has been overcome by the adoption of the Free Primary Education policy in 2003. This policy led to the abolition of primary school fee levies charged to parents and had the effect of increasing school enrolment by 1.2 million children.[25] Although it is hard to quantify the future economic effects of educating an addition of 1.2 million children, this move will without doubt contribute to a higher average productivity level in Kenya.[26] The SSA governments can also improve the quality of education by investing in primary school instructional materials. Since many schools lack enough books and classrooms, public schools are often overcrowded, where quality of education suffers. By investing a bit more in new classrooms and increasing the number of educational resources available to students, the quality of education can be greatly improved given the originally low level. Improvement of resources available to students also includes having training programs for teachers as well as employing more teachers at public schools to increase the teacher/student ratio.

6. Residual Variance—Agency Coordination in the Process of Institutional Implementation

Although the benchmark result shows significant relations between the poverty level, measured by PPP, and the three endogenous as well as exogenous factors, countries with very similar levels of such constituents may still undergo considerably different development process and achieve diverging outcomes. How do we explain for such a 'residual variance' that is unaccounted for by the benchmark model among different SSA countries with similar levels of the principal constituents? The answer lies in the actual implementation of institutional reforms and liberal policies.

In order to invigorate the institutions and liberal policies as suggested in the previous sections, a strong and effective implementation mechanism is necessary. Better

[25] UNESCO, 2006, *UNESCO Policy Brief on Early Childhood: Impact of Free Primary Education on Early Childhood Development in Kenya*

[26] Another way to improve education in SSA is by ensuring equity of access to basic education. The governments should invest in primary school infrastructure and expand educational opportunities to arid and semi-arid lands so that children in these areas can attend school.

coordination among economic agents to achieve a more desirable outcome as planned with higher efficiency is the key to success. In the implementation process, measures should be taken to enable different agents to be more aware of their respective roles in the domestic socio-economic environment, so as to pave way to more effective and efficient institutional reforms. In addition, information dissemination is often neglected as one of the critical elements in enhancing communications and thus agency coordination. Therefore, to provide a better decision-making environment for all agents, it should be taken seriously to increase the domestic information availability and improve the asymmetric information problems through mitigating communication barriers. In the following, I will focus on the three primary domestic socio-economic agents in the SSA countries, namely, farmers, firms and governments, to analyze respective issues concerning a satisfactory institutional implementation.

6.1 **Small scale farmers: Agricultural information dissemination**

Being information-dependent in nature, agriculture in SSA faces huge challenges with limited access to information and innovations. Dissemination of basic agricultural information such as pest control, soil fertility, farm credit, etc. are much impeded, which in turn blocks the delivery of agriculture financing resources and related technologies. To small scale farms which contribute an enormous proportion of agricultural production in SSA countries, demands for institutionalized information have never been sufficiently accommodated, having farmers often fettered in attempt to higher productivity (Ozowa, 1997).

Despite the much difficulty, the information dissemination problem can be tackled with good agency coordination from different spheres and levels, as in the case of Nigeria, which can serve as a functioning example for other SSA countries to address their own problems in the agricultural sector. In Nigeria, where over 94% of all farms are classified as small, agricultural market information to small scale farmers is provided by the Ministry of Agriculture, in cooperation with local institutes, such as International

Institute for Tropical Agriculture (IITA), the National Root Crops Research Institute, the National Veterinary Research Institute, and the three local universities of agriculture. Information is then disseminated through extension workers and broadcasting media, e.g. the Agricultural Extension and Research Liaison Services (AERLS), the extension services of the Agricultural Development Project (ADPs), Ministries of Agriculture at both state and federal levels, Cooperative Extension Centers (CEC), and various media forums for agricultural issues. Such information is also diffused through public and private leaflets, newsletters, posters, exhibits and state-owned radio and television programs. Teachers, development field staff, entrepreneurs and staff of the Ministry of Agriculture also actively participate in the campaign. Such concerted efforts, gathered from different social layers, and spread nationwide in good coordination, have helped the country greatly in increasing its agricultural productivity as well as the gross production.

6.2 Micro, small and medium sized firms: Private mass media involvement

Production of firms is of central economic importance to a country's development, but here, rather than discussing the conventional issue of goods and markets, I want to address a more inducing issue related to the private business sector that can positively influence the institutional implementation of liberal policies—the private mass media involvement. In most SSA countries, the deregulation of media catalyzed a boom of private radios to accommodate the needs of information exchange for micro, small and medium sized entrepreneurs (MSEs). Highlighting policy issues concerning daily entrepreneurial operations, the burgeoning radio stations targeting a large scale of MSEs offer investigative reports, phone-ins, interviews and public debates in two-way flow of information. Many of these commercial media collaborate with the International Labor Organization (ILO)'s Focus Program on Boosting Employment through Small Enterprise Development (SED) to enhance information provision and technical viability.[27]

[27]The Communication Initiative Networks, *Nekolera Gyange (I Run My Own Business),* last updated Apr. 2009

A brilliant example of how independent media help forge better understanding and execution of development policies is Nekolera Gyange, a private media firm in Luganda, Central Uganda. It serves as a channel for marginalized business people, especially the self-employed, to voice out their concerns and harbor their interests. In 2000, Nekolera Gyange successfully reversed a government ban on small-scale milk vending and saved thousands of jobs. It also facilitated through its radio programs the implementation of government policies in the issue of enforcing fishing regulations on Lake Victoria. Originally perceived as an inflicting government move to the suffering fishing industry, the policy was later construed when officials and fishermen shared the platform offered by Nekolera Gynage to present their explanations and propose solutions. In the Ugandan story, both the government and the MSEs managed to coordinate well with the help of private media to achieve greater economic benefits and social development.

6.3 The Role of Government

In the discussion of institutional reforms and policies implementation, the role of government is always an issue of continuous debate. Some claim that Statism, which supports strong government involvement in engineering economic growth, is the dominant solution to a thorough execution of development policies and institutional reforms, while some others argue that the self-regulating market mechanism is intelligent in coordinating conflicting interests and can achieve an effective and efficient implementation of institutions and policies without over-disruptions from the government. Noting such arguments in the academia as well as in the real policy arena, it should be pointed out that this paper does not posit any stance towards either of these directions. The role of government has been always hard to define and continuously ambiguous in different contexts. To preserve the focus of my research, I try not to touch ground the debate of ‘market or state’, but rather restate and emphasize the analytic locus of control in this paper: decomposition of economic performance of SSA countries in search for principal factors that determine the poverty reduction progress made by these countries.

Although I stress the importance of institutional implementation and emphasize the mutual dependence of domestic institutions and government, I reserve my view on the absolute positioning of government and adopt a contextual approach to perform the analysis, concluding with a contingent treatment of government involvements in the process of institutional implementation. It should also be noted that the actual implementations evidenced in different SSA countries are arguably a product of complex interactions of the interests of various parties, including the SSA governments, the donors of those IOs and NGOs, and the indigenous people, which makes the implementation issue at this level another grand topic for further research.

7. Conclusion

This paper started by asking a simple but deep question of how can we improve the poverty situation in Africa, especially in the SSA countries, and proceeded to construct a benchmark regression model, base on which the three principal constituents of economic development in SSA are identified and discussed. The implication of the benchmark result is simple in that it indicates institutions play a significant role in poverty reduction in the SSA region, so do health care and education, with natural resources an exogenous factor that a country has no control of. However, the implications have also drawn attention to the more subtle but fundamental issue that complicates the poverty reduction progress in SSA—the actual implementation of institutions and policies, in which I highlight three primary actors in a country's socio-economic development and propose a possible solution to the agency problem through social coordination and information dissemination. Although individual countries have their own set of determinants of poverty reduction, the methodology proposed is believed to serve as a good tool for quantitative and qualitative evaluation, comparison and implication. Problems are tackled step by step, and I do not intend to address the poverty reduction issue in SSA completely within a single paper. Some issues such as the role of government in the process of institutional implementation are left for further research to produce a clearer vision on the matters. However, the basic intuition remains: at the pragmatic level of poverty reduction, policy is of the dominant concern, and the implementation in essence is a contingent strategy formed upon the domestic context of a specific country. The basic logic goes that as long as a principal component to poverty reduction is statistically significantly identified, agents in the economy should increase their awareness and direct their interactions towards the consideration of any feasible policies corresponding to the principal component so that the relation implied by the benchmark model can be fully utilized.

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Appendix A: The Case of Tanzania

After the positive and normative analyses in the previous sections, we may wonder whether this principal constituents decomposition applies to a real world SSA country and whether it is time consistent. Here, let us consider a case study of the economic performance of Tanzania in the past thirty years to illustrate the implications drawn from the benchmark model. One thing should to be clarified is that good institution is not exclusively reserved for capitalism. However, historical evidence shows that due to agency problems, conflicting interests in different levels make it much harder for countries under Socialism to maintain a good institution thus perform not as good in poverty reduction as under Capitalism, at least well proven by the modern history of economic development in most nation-states after WWII.

Tanzania had been a classic example of African Socialism since the 1960s. However, years of implementation of socialist policy under poor governance due to insufficient institutional supervision have made the country among the most aid-dependent and least developed in the world. Its highly inefficient collective farms and notorious forced relocations have not only discouraged labor productivity but undermined its institutions, especially the legal framework, as central planning demands subjective resource allocation and even arbitrary confiscation of property which is deemed illegal under property right protection enforcement. With the demise of the Soviet Union and the failed economic model it represented, Tanzania contemplated on a critical institutional reform in the mid 1980s. Privatization and gradual institutional reforms in various sectors including banking and governance have vitalized the country's economy, effectively reducing its poverty rate measured by the UN standard by 28% between 1994 and 2002 according to a World Bank research. In the case of Tanzania, institutional reforms, especially improvements in the legal system and administration and legislation, have been vital to the poverty reduction progress the country has achieved. Although institutional reforms and liberal policies can and has indeed brought positive changes in SSA countries, we should acknowledge the fact that improvement of domestic institutions is not the only and ultimate cure for the problem of poverty in the region. Other factors that have contributed to poverty in SSA are deeply embedded in those countries, and are not likely to change much in the near future.

Appendix B: Tables and Figures

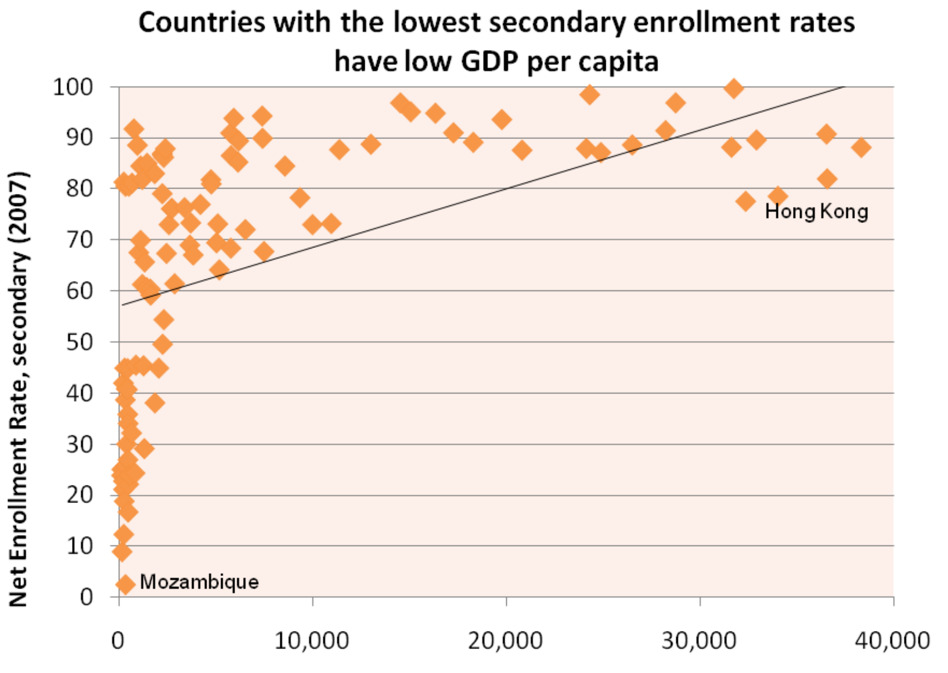
Table 1

	GDP Growth (% per capita)	Human Rights	Judicial Independence	Decline in public corruption
Tanzania	-17	+24	+10	+12
Senegal	-20	+6	-19	+8

Table 2

10 Countries with the Lowest Secondary Net Enrollment Rates *(2007)*		
1	**Mozambique**	**2.55**
2	**Niger**	**9.01**
3	**Burkina Faso**	**12.40**
4	**Mauritania**	**16.77**
5	**Uganda**	**18.89**
6	**Madagascar**	**21.19**
7	**Senegal**	**22.21**
8	**Sierra Leone**	**22.82**
9	**Malawi**	**23.91**
10	**Lesotho**	**23.94**
Source: UNESCO Institute for Statistics in EdStats, Aug 2009		

Figure 1



Source: UNESCO Institute for Statistics in EdStats, August 2009

Appendix C: Regression data

Dependent Variable: PPP_PER_CAPITA_2009
Method: Least Squares
Date: 11/17/09 Time: 12:54
Sample: 1 11
Included observations: 11
White Heteroskedasticity-Consistent Standard Errors & Covariance

Variable	Coefficient	Std. Error	t-Statistic	Prob.
INSTITUTIONS	-10.33537	5.086561	-2.031897	0.0817
LN_OF_SELECTED_EXPORT_VA	128.6785	48.28265	2.665108	0.0322
HEALTH___PRIMARY_EDUCATI	-6.308255	18.36752	-0.343446	0.7413
C	456.9752	2273.875	0.200968	0.8464

R-squared	0.536967	Mean dependent var	1327.273
Adjusted R-squared	0.338524	S.D. dependent var	485.9854
S.E. of regression	395.2575	Akaike info criterion	15.07224
Sum squared resid	1093599.	Schwarz criterion	15.21693
Log likelihood	-78.89732	F-statistic	2.705906
Durbin-Watson stat	2.664997	Prob(F-statistic)	0.125561